



plums green salad



baseball bicycling soccer



peaches peas corn



Trends from the California Children's Healthy Eating and Exercise Practices Survey (1999-2003):

Changes in campaign recall, knowledge, behavior, and body mass index

Angie Keihner¹, Patrick Mitchell¹, Mark Hudes²,

¹ Public Health Institute, ² University of California, Berkeley

UCD Brown Bag Lecture

May 3, 2005



broccoli bananas carrots



swimming in-line skating



100% fruit juice

It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Funding

- United States Department of Agriculture Food Stamp Program
- The California Endowment
- California Department of Food and Agriculture

It's So Easy.

CaICHEEPS



peaches peas corn



baseball bicycling soccer



plums green salad



100% fruit juice

swimming in-line skating



broccoli bananas carrots



It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Survey Purpose

- Fills a monitoring gap - no comprehensive statewide surveys on nutrition for 9-11 year-old age group
- Includes dietary and physical activity practices on a typical school day; knowledge, attitudes, beliefs; *5 a Day—Power Play! Campaign* awareness
- *Campaign* evaluation and improvement

It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Sample Selection

- Market research panel population
- Quota sampling based on CPS
- Demographically diverse
- English-speaking sample

It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Administration

- Years: 1999, 2001, & 2003
- Conducted April – June/July
- Parent-assisted 2-day food and physical activity diary: Mailed, filled out, and returned
- Unassisted follow-up telephone interview

It's So Easy.



Sample and Response Rate

- ~2000 qualified households
- Returned food/activity diary
 - N = 814, 754, & 632
 - 41%, 35%, & 29% response rate
- Completed telephone interview
 - N = 394, 369, & 379
 - 51%, 53%, & 68% response rate



watermelon

softball basketball dancing



green beans carrots



plums green salad



baseball bicycling soccer



peaches peas corn

California Children's 5 a Day–Power Play! Campaign



broccoli bananas carrots



swimming in-line skating



100% fruit juice



It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Campaign Description

Behavioral Objectives

- Eat 5 or more servings of FV every day
- Engage in at least 60 minutes of PA every day
- Increase participation in federal food assistance programs

Primary Target

- 9- to 11-year-old children, primarily low income

Secondary Targets

- Parents of 9- to 11-year-old children
- Adult intermediaries, opinion leaders, and policy makers

It's So Easy.



Campaign Components

- Regional lead agencies
- Implementation in 6 channels
 - Schools
 - CYOs
 - Supermarkets
 - Farmers' Markets
 - Food Services/Restaurants
 - Local Promotions/Media
- Coordination among channels and partners



watermelon

softball basketball dancing



green beans carrots



It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Campaign Components

- Free materials to qualified agencies
 - User-friendly and appealing to kids
 - English and Spanish handouts



It's So Easy.

Social Ecological Model

Regional coalitions; media advocacy; improving access to f/v and safe environments for active play

Influencing food policies at schools and community youth organizations; working with retailers to improve selection and availability of f/v; school salad bars and gardens

Influencing teachers and youth leaders; improving acceptability among peers; group activities

Activities in multiple channels; Media

Social Structure, Policy

Community

Educate policy makers; media advocacy; partner with advocacy groups

Organizational

Interpersonal

Individual





watermelon

softball basketball dancing



green beans carrots



Program Growth

	1998	1999	2000	2001	2002	2003
Campaign Regional Lead Agencies	3	4	7	11	10	11
Region Funding	\$225 K	\$480 K	\$765 K	\$1.15 M	\$1.1 M	\$2.2 M
Campaign Direct Reach	50 K	100 K	247 K	205 K	225 K	250 K
Campaign Consumer Impressions	N/A	530 K	6 M	25.2 M	26.2 M	61.1 M
School District Local Incentive Awardees	10	26	33	36	44	42
County Offices of Education	0	1	3	5	7	11

Notes: Direct contacts are person to person interactions with targeted children lasting 5 or more minutes. Consumer impressions generated from local promotions and media are categorized as indirect contacts.

It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Campaign Reach

	1999	2001	2003
4th & 5th Grade Enrollment (Potential Reach)	493 K	980 K	980 K
<i>Campaign Direct Reach</i>	100 K	205 K	250 K
<i>Campaign Direct Contacts: % Reached</i>	20%	21%	26%
<i>Campaign Consumer Impressions</i>	530 K	25.2 M	61.1 M
<i>Campaign Indirect Contacts</i>	1.1	25.7	62.3
Total Contacts	1.3	25.9	62.7

Notes: Direct contacts are person to person interactions with targeted children lasting 5 or more minutes. Consumer impressions generated from local promotions and media are categorized as indirect contacts.

It's So Easy.



Mass Media Culture



brownish bananas carrots



swimming in-line skating



100% fruit juice

It's So Easy.

peaches peas corn
baseball bicycling soccer
plums green salad





plums green salad



baseball bicycling soccer



peaches peas corn



Campaign Exposure



broccoli bananas carrots



swimming in-line skating



100% fruit juice

It's So Easy.



Ranked Exposure Sources

- **2001**
 1. TV Spots (77)
 2. School (19)
 3. Radio (6)
 4. Newspaper/
Magazine/
Book (6)
 5. Billboards/
Posters (4)
 6. CYO/ Boys &
Girls Clubs
/Scouts (3)
 7. Family (2)
 8. Friends (2)
- **2003**
 1. TV Spots (152)
 2. School (32)
 3. Billboards (11)
 4. Radio (10)
 5. Family (10)
 6. Newspaper (7)
 7. CYO/ Boys & Girls
Clubs /Scouts (6)
 8. Friends (5)
 9. Magazine (5)
 10. Church (4)
 11. Supermarket (2)

Notes: TV spots are asked directly; Other responses are unsolicited.



watermelon

softball basketball dancing



green beans carrots



It's So Easy.



Belief That 5 Servings of Fruits and Vegetables Are Needed for Good Health Increased with Each Additional Campaign Exposure Source, 2001

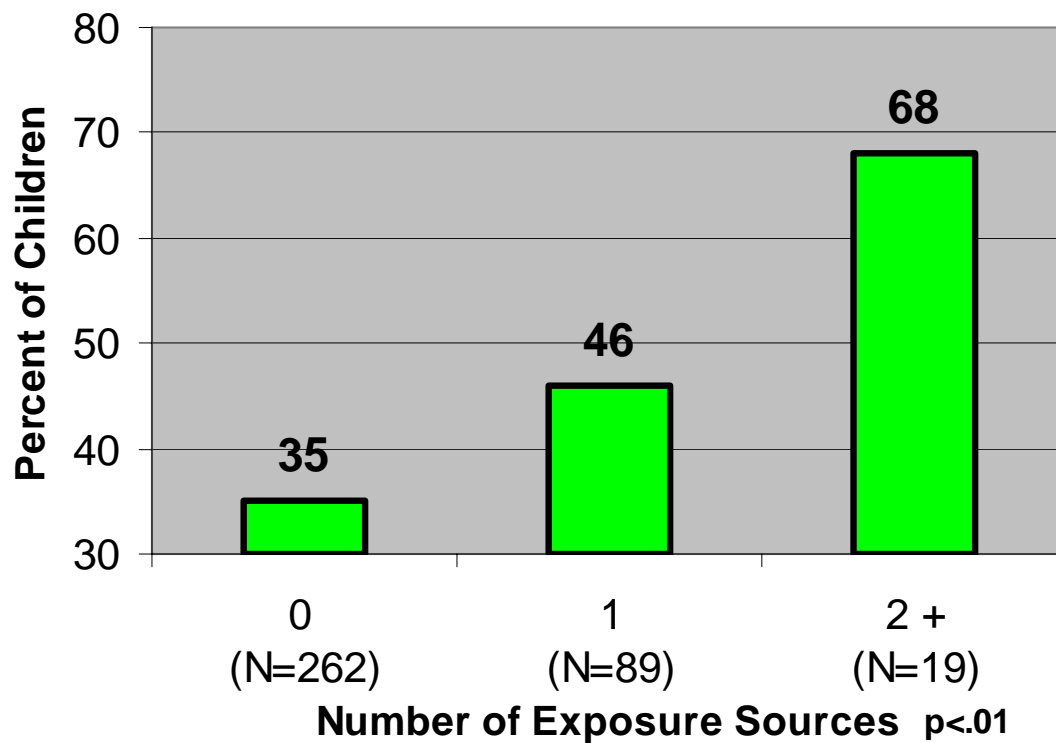


watermelon

softball basketball dancing



green beans carrots



It's So Easy.



watermelon

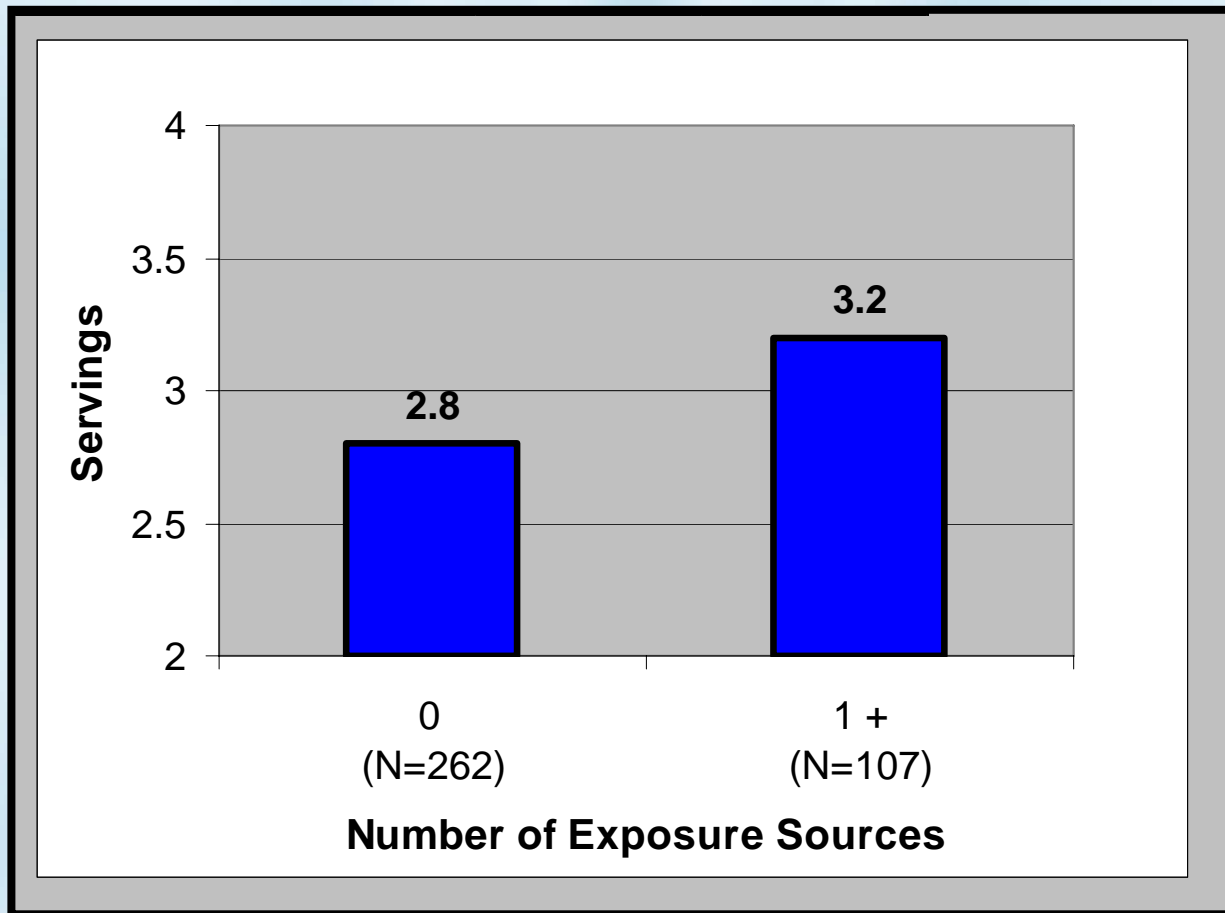
softball basketball dancing



green beans carrots



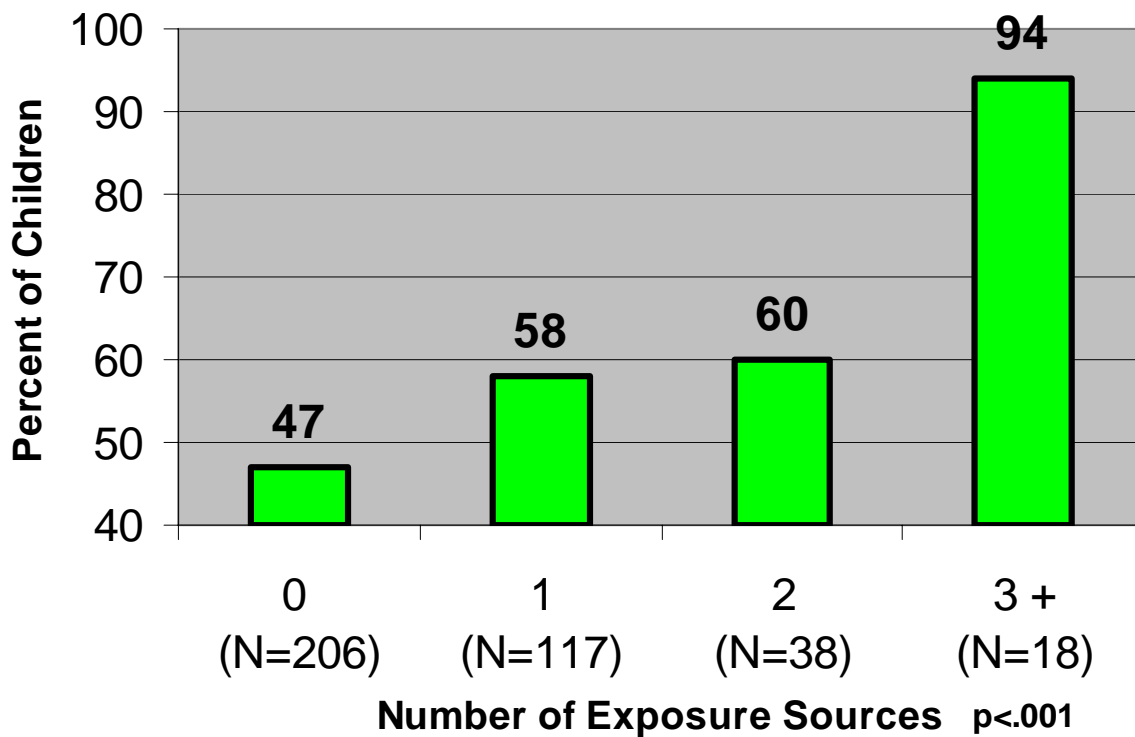
Consumption of Fruits and Vegetables Was Higher Among California Children Recalling the Campaign, But Not Significantly, 2001



It's So Easy.



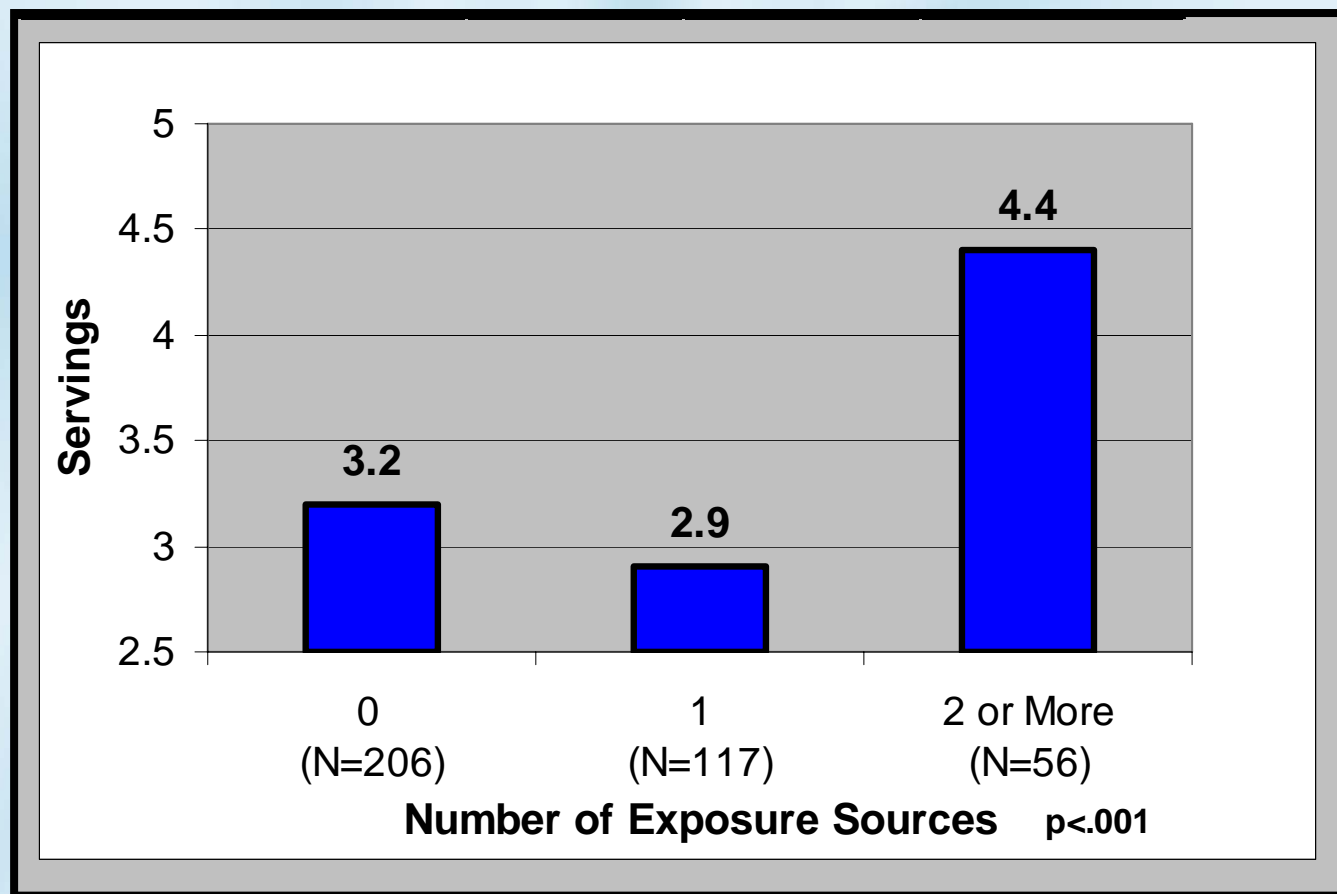
Belief That 5 Servings of Fruits and Vegetables Are Needed for Good Health Increased with Each Additional Campaign Exposure Source, 2003



watermelon
softball basketball dancing
green beans carrots



Consumption of Fruits and Vegetables Was Highest Among California Children Reporting Two or More Exposure Sources, 2003



watermelon

softball basketball dancing



green beans carrots



plums green salad



baseball bicycling soccer



peaches peas corn



Campaign Recall Trends



broccoli bananas carrots



swimming in-line skating

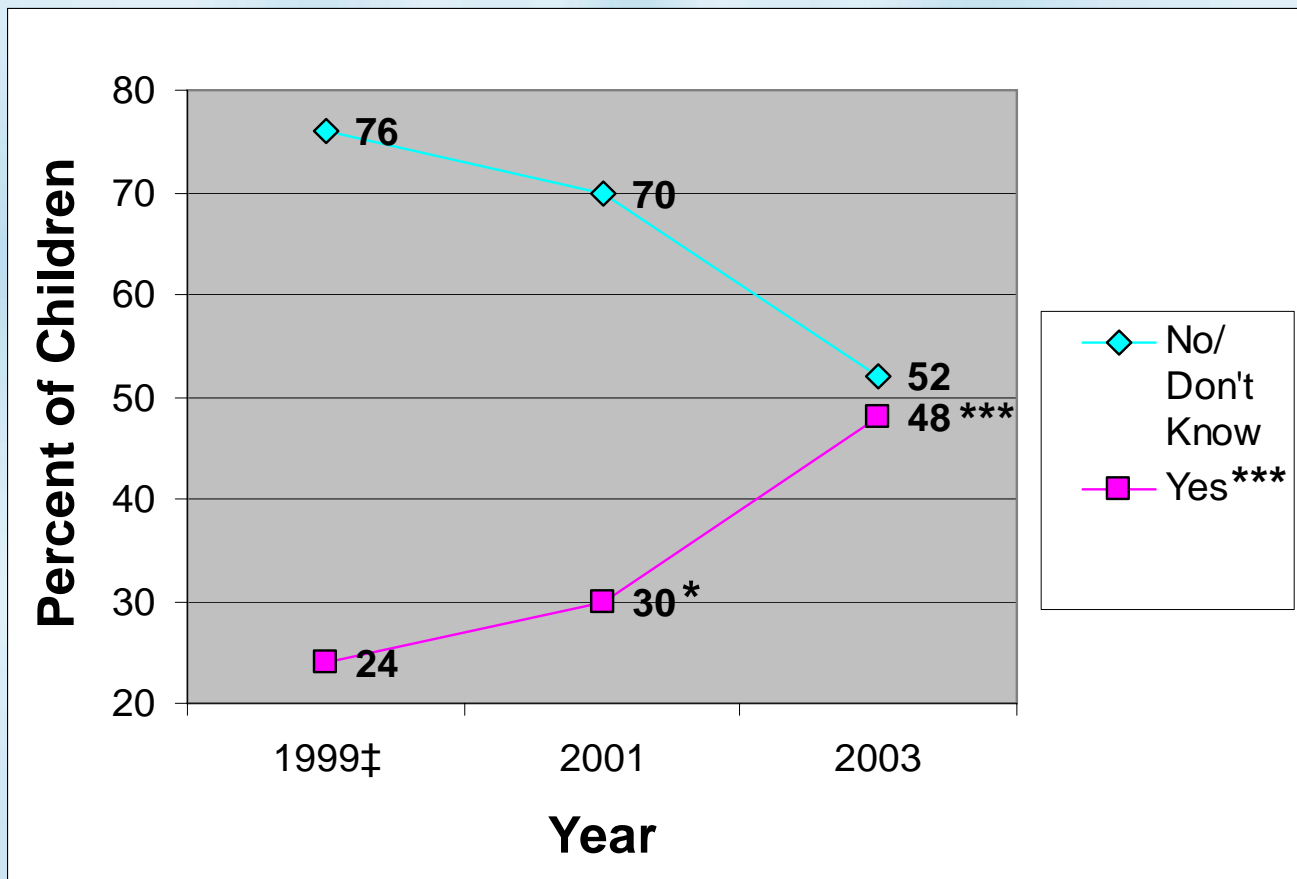


100% fruit juice

It's So Easy.



Recall of the 5 a Day—Power Play! Campaign Doubled from 1999 to 2003



Notes: * $p < .05$; *** $p < .001$; [‡] Campaign awareness only included TV spots in 1999; Children who recalled the *California Children's 5 a Day—Power Play! Campaign* vs. others (i.e. “no” and “don’t know”).

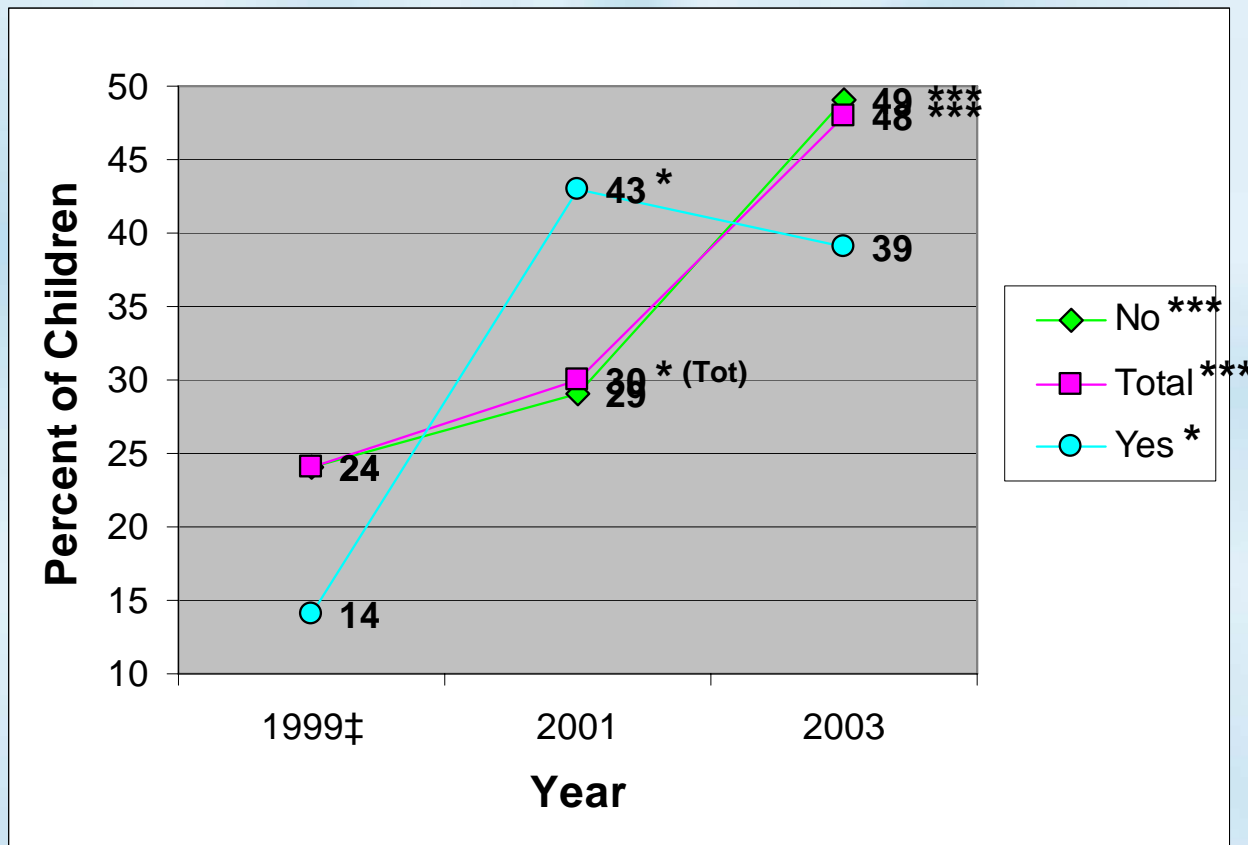
It's So Easy.

watermelon
softball basketball dancing
green beans carrots





Children from Households Using Food Stamps Showed a 25% Gain in Recall



Notes: * $p < .05$; *** $p < .001$; † Campaign awareness only included TV spots in 1999; Children who recalled the *California Children's 5 a Day—Power Play! Campaign* vs. others (i.e. “no” and “don’t know”).

It's So Easy.

green beans carrots
softball basketball dancing
watermelon





peaches peas corn

baseball bicycling soccer



plums green salad

Knowledge Trends



100% fruit juice

swimming in-line skating



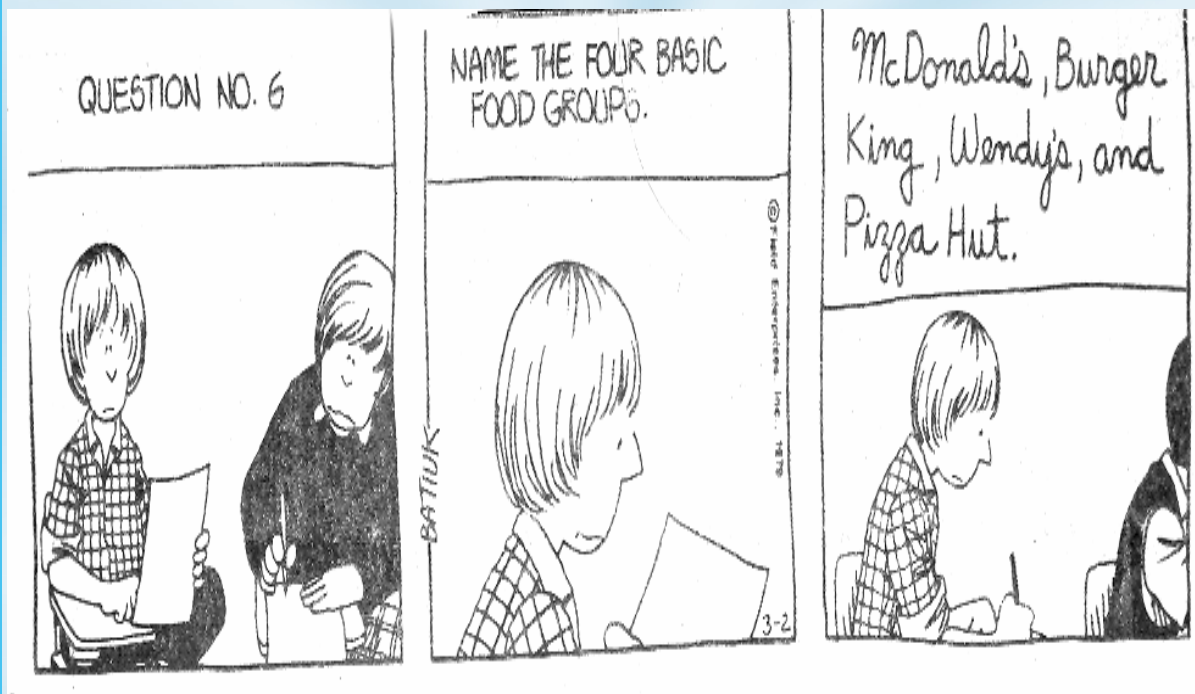
broccoli bananas carrots





Nutrition Knowledge - 1999

peaches
plums
green salad
baseball
bicycling
soccer
shoe



broccoli
bananas
carrots



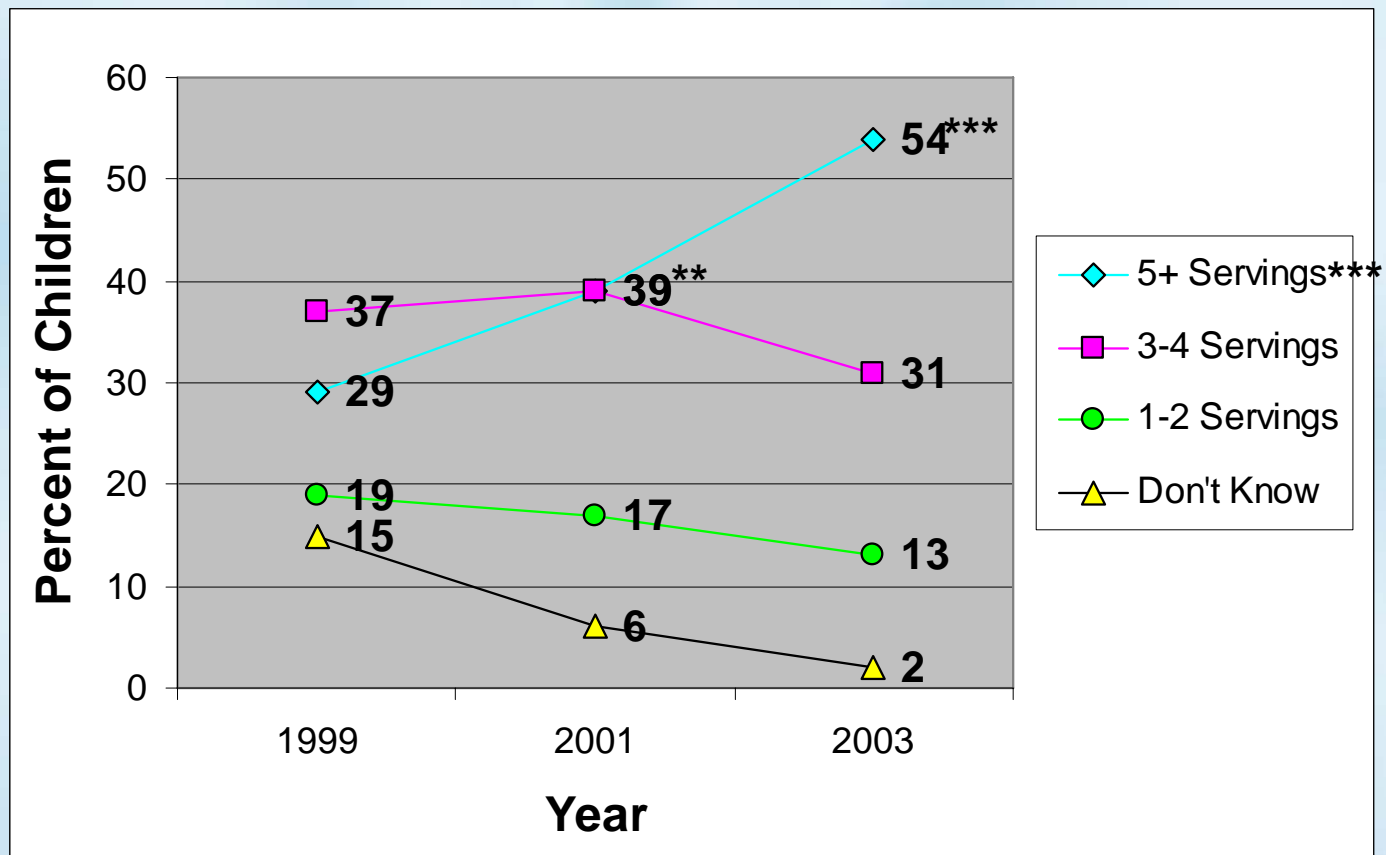
swimming
in-line skating



100% fruit juice



Belief That 5 or More Servings of Fruits and Vegetables Are Needed for Good Health Increased from 1999 to 2003



Notes: ** $p < .01$; *** $p < .001$; Children who believe 5+ srvgs of FV vs. others (4 or less srvgs of FV and "don't know").

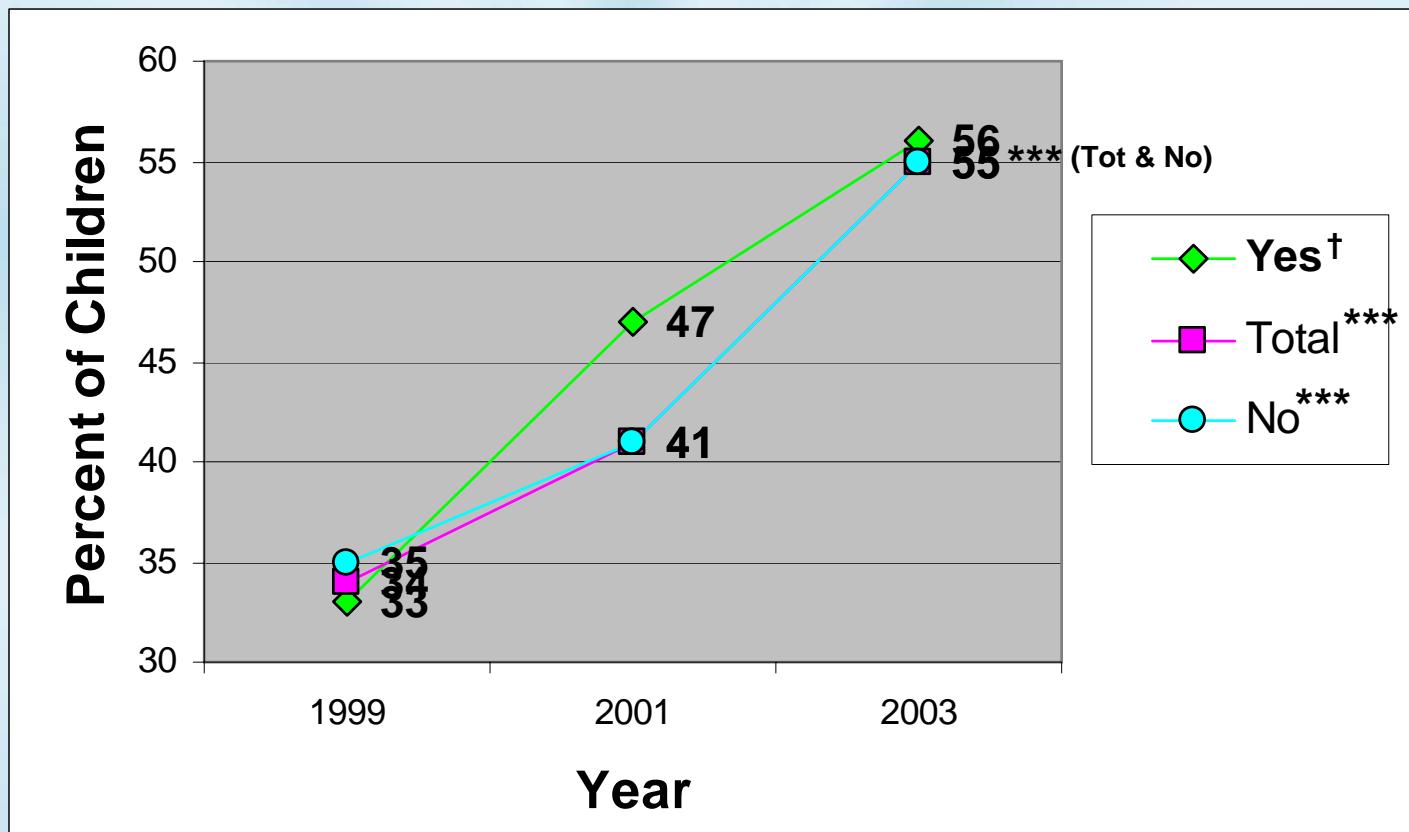
It's So Easy.

watermelon
softball basketball dancing
green beans carrots





Belief Increased 23% Among Children from Households Using Food Stamps



Notes: *** $p < .001$; [†]Approaching statistical significance at $p = .074$. Children who believe 5+ srvgs of FV vs. others (4 or less srvgs of FV); **Excludes** those reporting "don't know."

It's So Easy.





Increased Campaign Recall and Knowledge



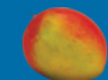
brownish bananas carrots



swimming in-line skating



100% fruit juice



baseball bicycling soccer



peaches peas corn

plums green salad



It's So Easy.



peaches peas corn

baseball bicycling soccer



plums green salad

Behavior Trends



100% fruit juice



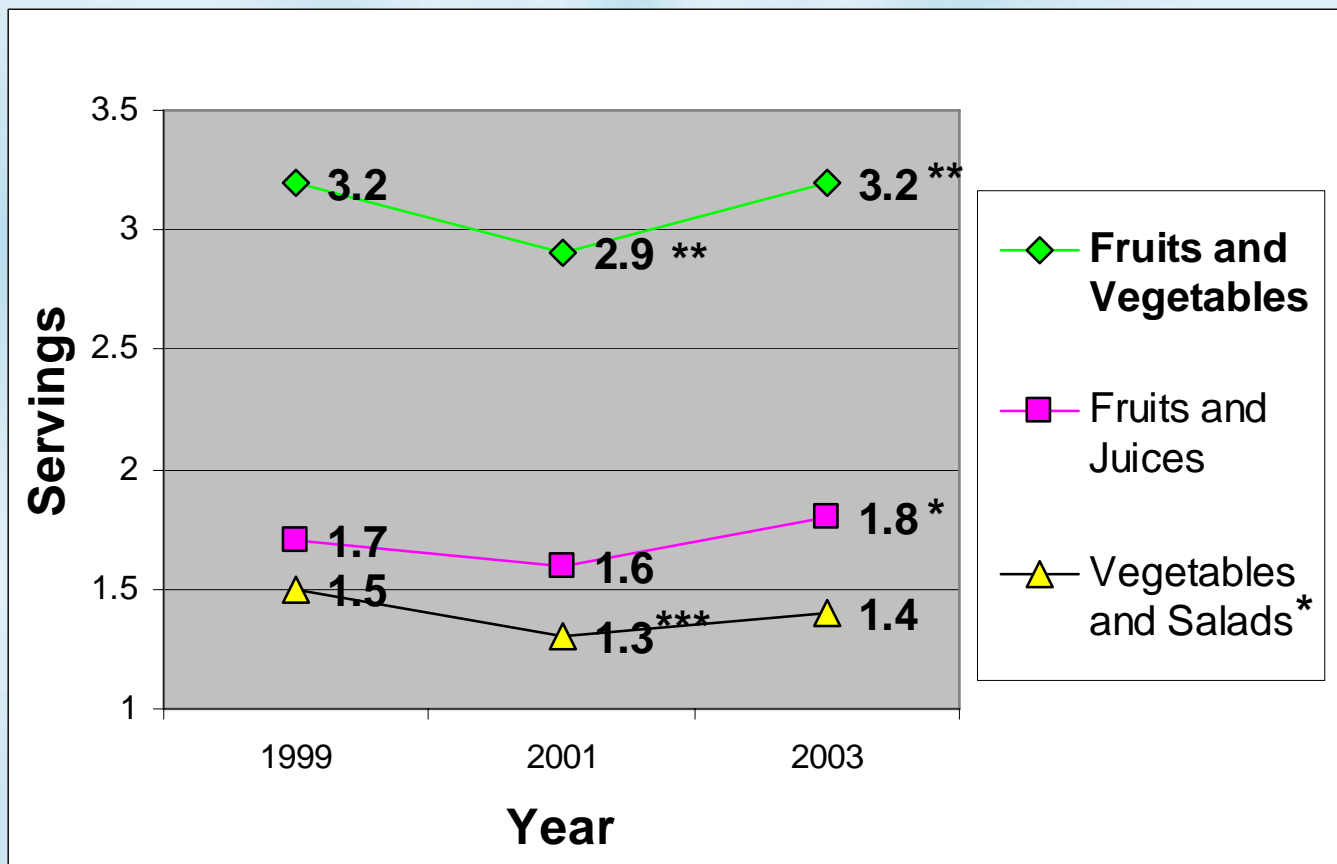
swimming in-line skating



broccoli bananas carrots



Mean Servings of Fruits and Vegetables Reported By California Children Dipped in 2001 and Returned in 2003



Notes: * $p < .05$; ** $p < .01$; *** $p < .001$

It's So Easy.

watermelon
softball basketball dancing
green beans carrots





watermelon

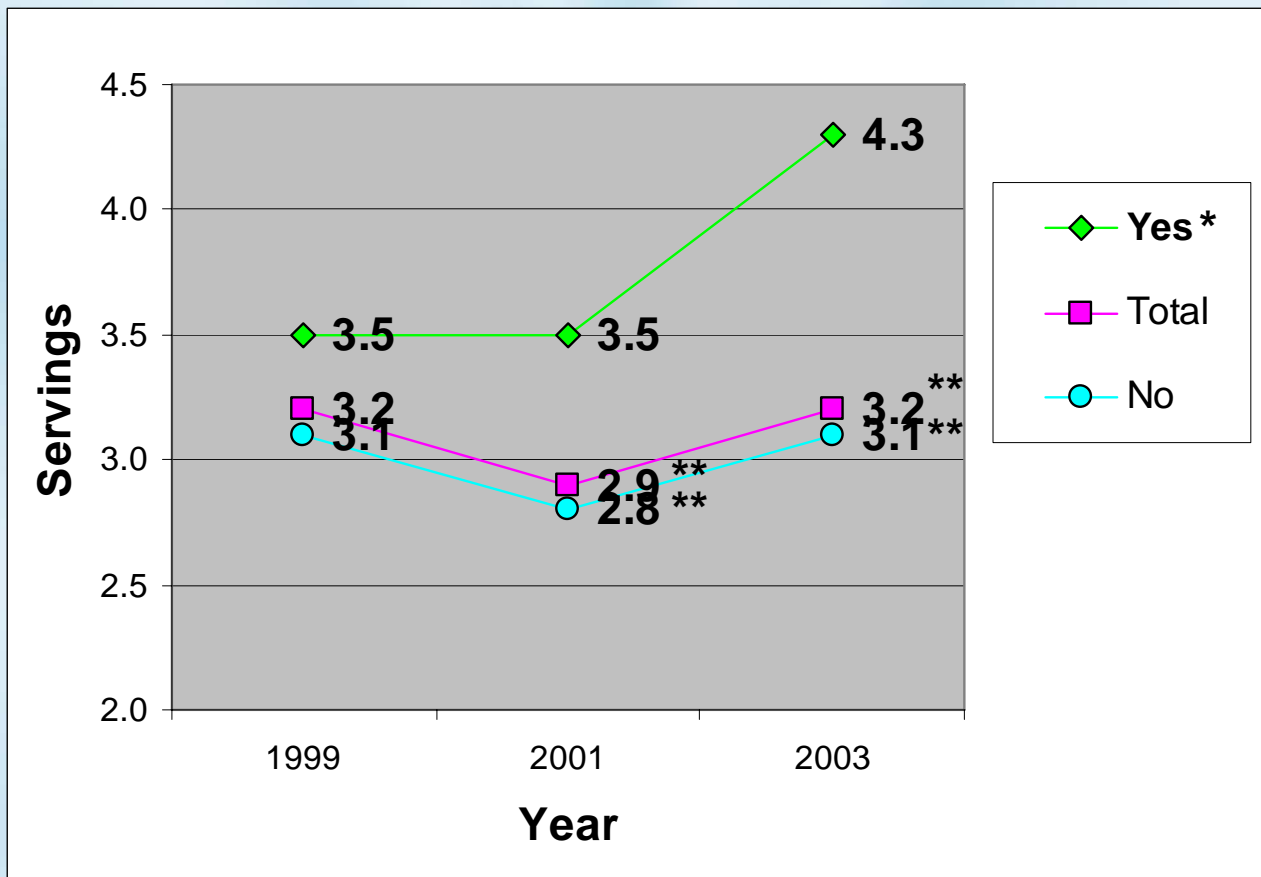
softball basketball dancing



green beans carrots



Gains in Mean Servings of Fruits and Vegetables Were Highest in Children from Households Using Food Stamps



Notes: * $p < .05$; ** $p < .01$

It's So Easy.



watermelon

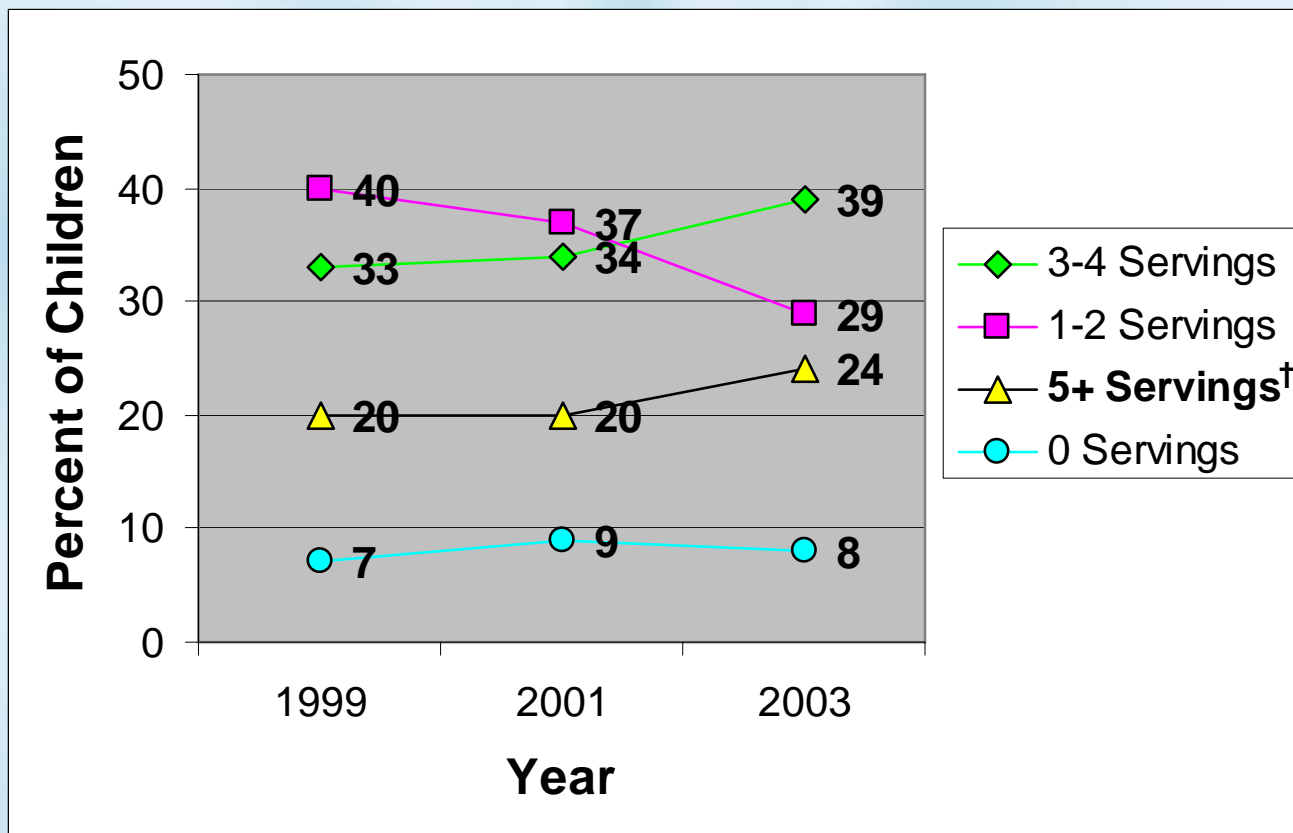
softball basketball dancing



green beans carrots



Reported Consumption of 5 a Day Among California Children Rose from 1999 to 2003



Notes: [†]Approaching statistical significance at $p=.077$.

It's So Easy.



watermelon

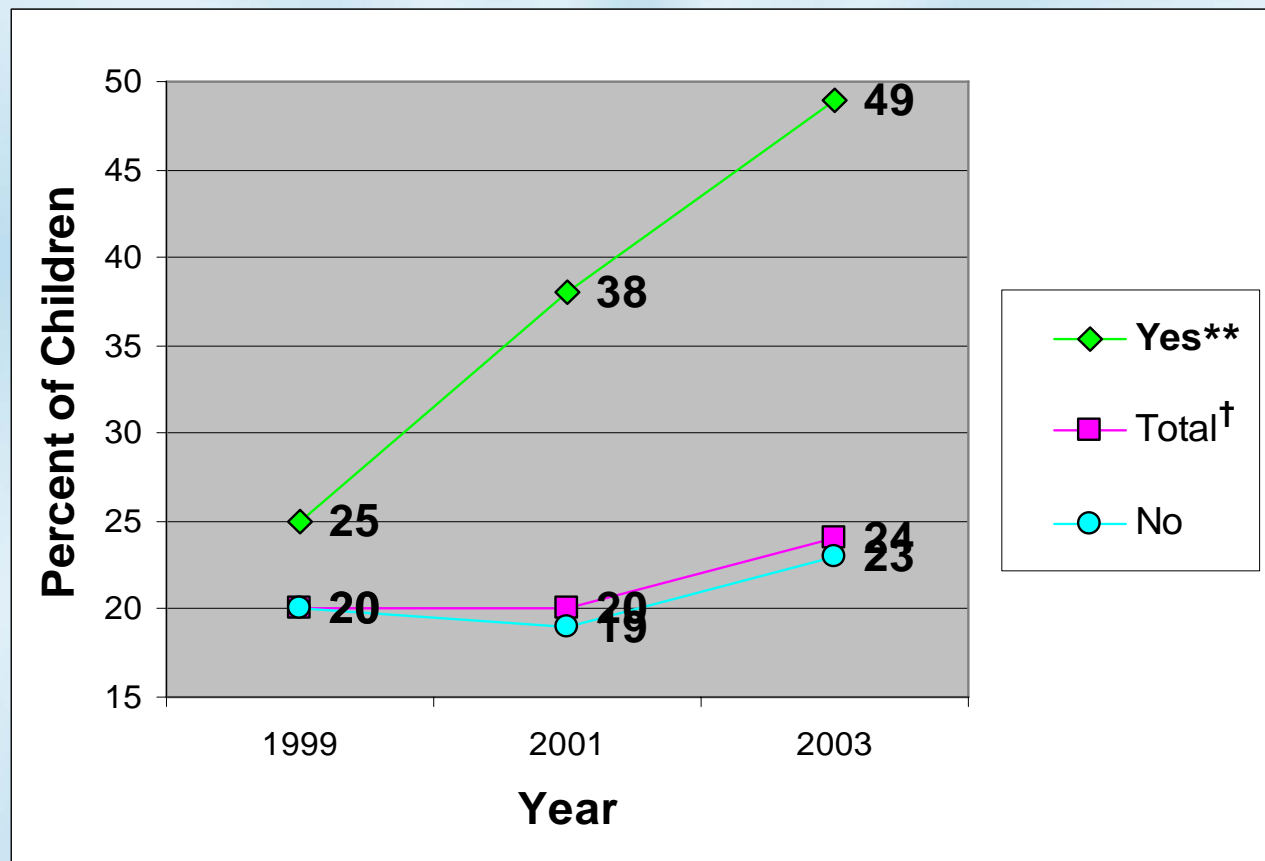
softball basketball dancing



green beans carrots



Gains in Consumption of 5 a Day Doubled Among Children from Households Using Food Stamps



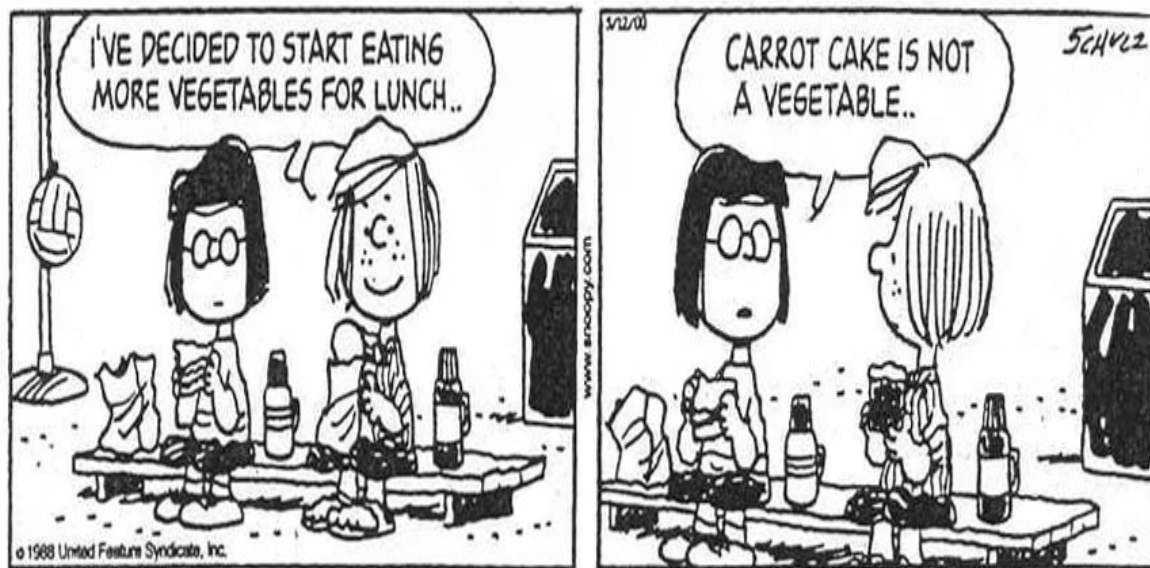
Notes: ** $p < .01$; † Approaching statistical significance at $p = .077$.

It's So Easy.



Fruit and Vegetable Intake Increased

PEANUTS Classics By Charles M. Schulz



broccoli bananas carrots



swimming in-line skating



100% fruit juice

It's So Easy.

plums green salad



baseball bicycling soccer



peaches peas corn





watermelon

softball basketball dancing



green beans carrots



Gains in Minutes of Vigorous Activity and Meeting the Physical Activity Guideline Among California Children

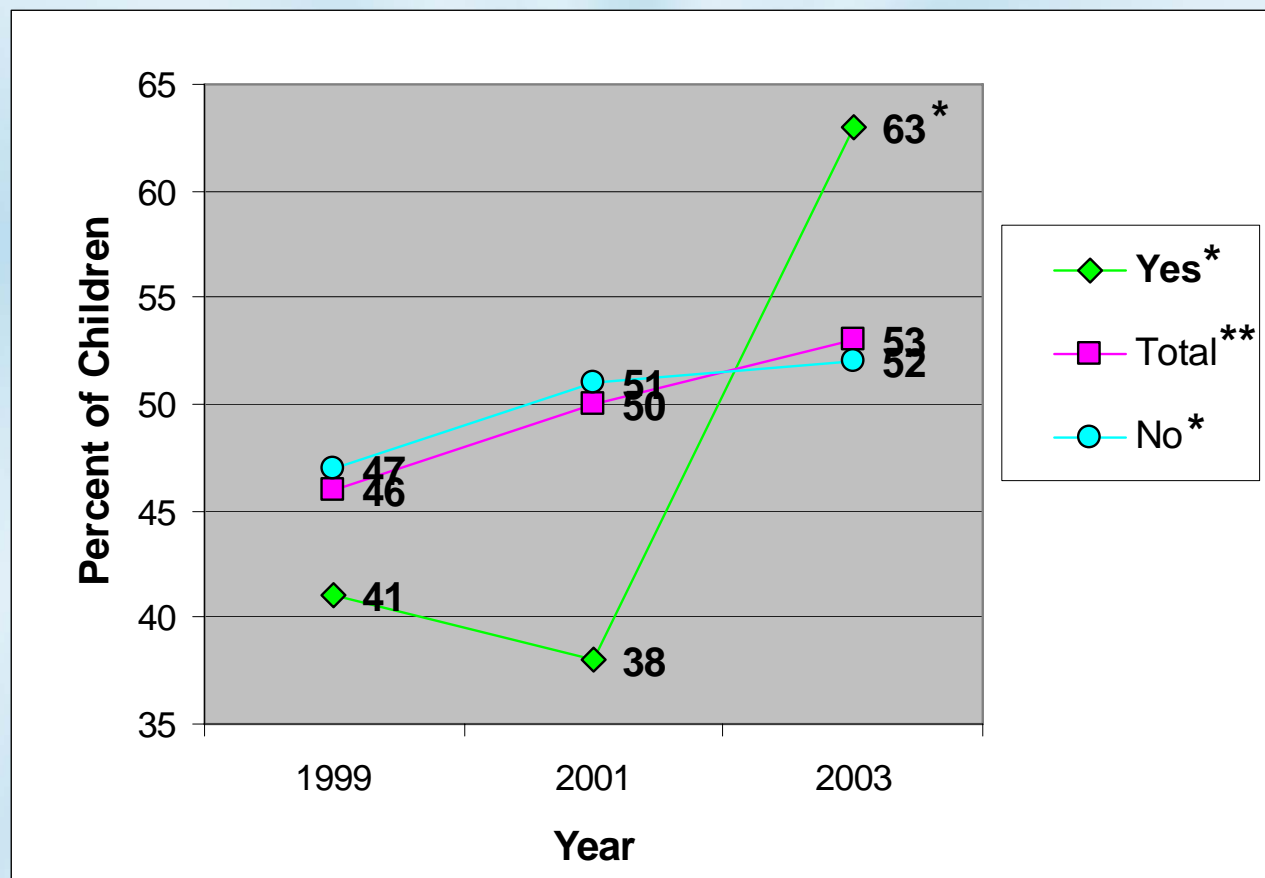
Mean Minutes	1999	2001	2003	
Total Physical Activity	82	87	91	
Light Physical Activity	17	14	16	
Moderate Physical Activity	29	34	30	
Vigorous Physical Activity	37	38	45**	**
Percent of Children	1999	2001	2003	
60 or More Minutes of Moderate and/or Vigorous Physical Activity	46	50	53	**

Notes: ** $p < .01$

It's So Easy.



Gains in Meeting the Activity Guideline Were Highest Among Children from Households Using Food Stamps



Notes: * $p < .05$; ** $p < .01$

It's So Easy.

watermelon
softball basketball dancing
green beans carrots





watermelon

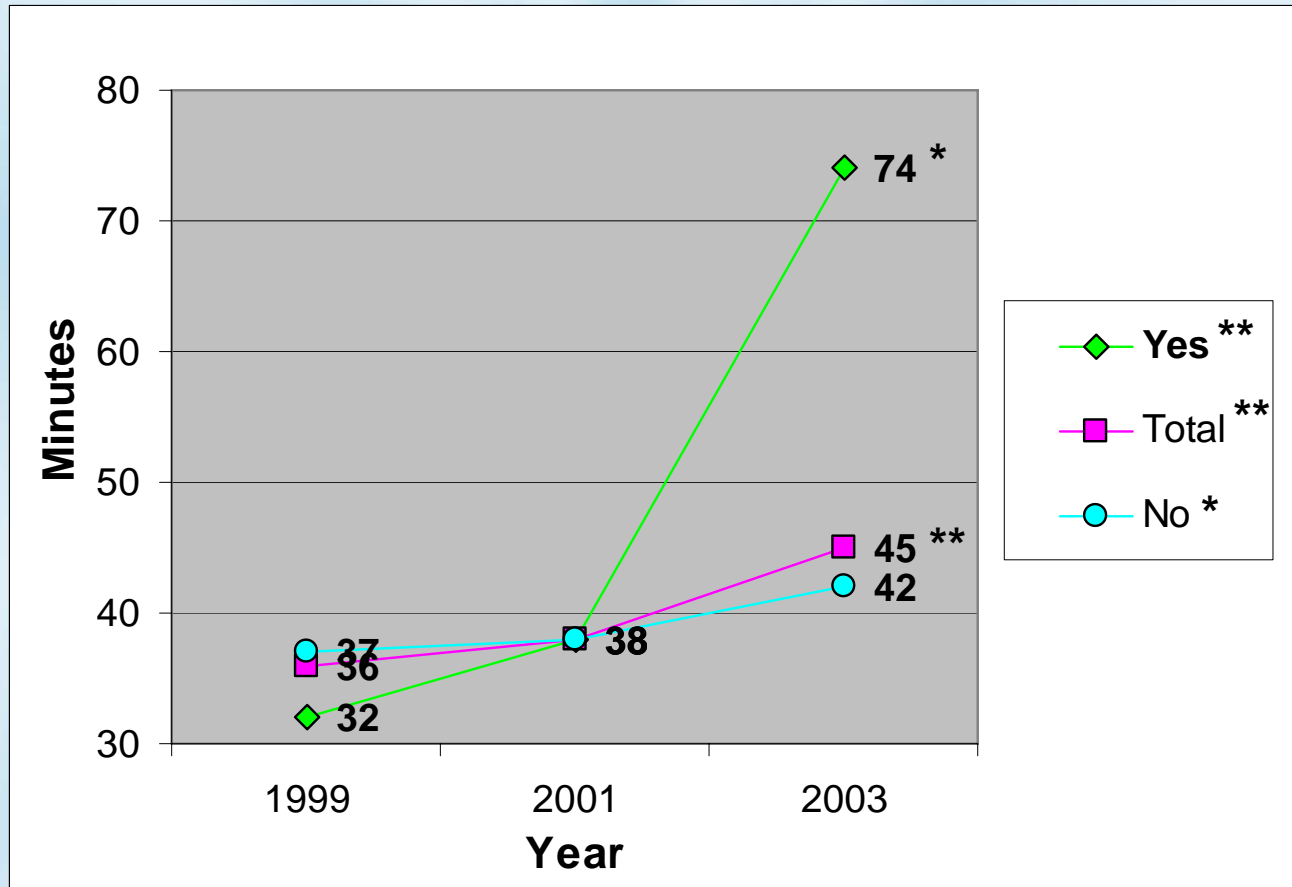
softball basketball dancing



green beans carrots



Gains in Minutes of Vigorous Physical Activity Were Highest Among Children from Households Using Food Stamps



Notes: * $p < .05$; ** $p < .01$

It's So Easy.



plums green salad



baseball bicycling soccer



peaches peas corn

At Risk and Overweight Trends



broccoli bananas carrots



swimming in-line skating



100% fruit juice



It's So Easy.



5 A DAY
POWER
PLAY



peaches peas corn

baseball bicycling soccer



plums green salad

HOWARD HUGE®



"Forget it, Howard...I'm not going to supersize it."



broccoli bananas carrots



swimming in-line skating



100% fruit juice



It's So Easy.



watermelon

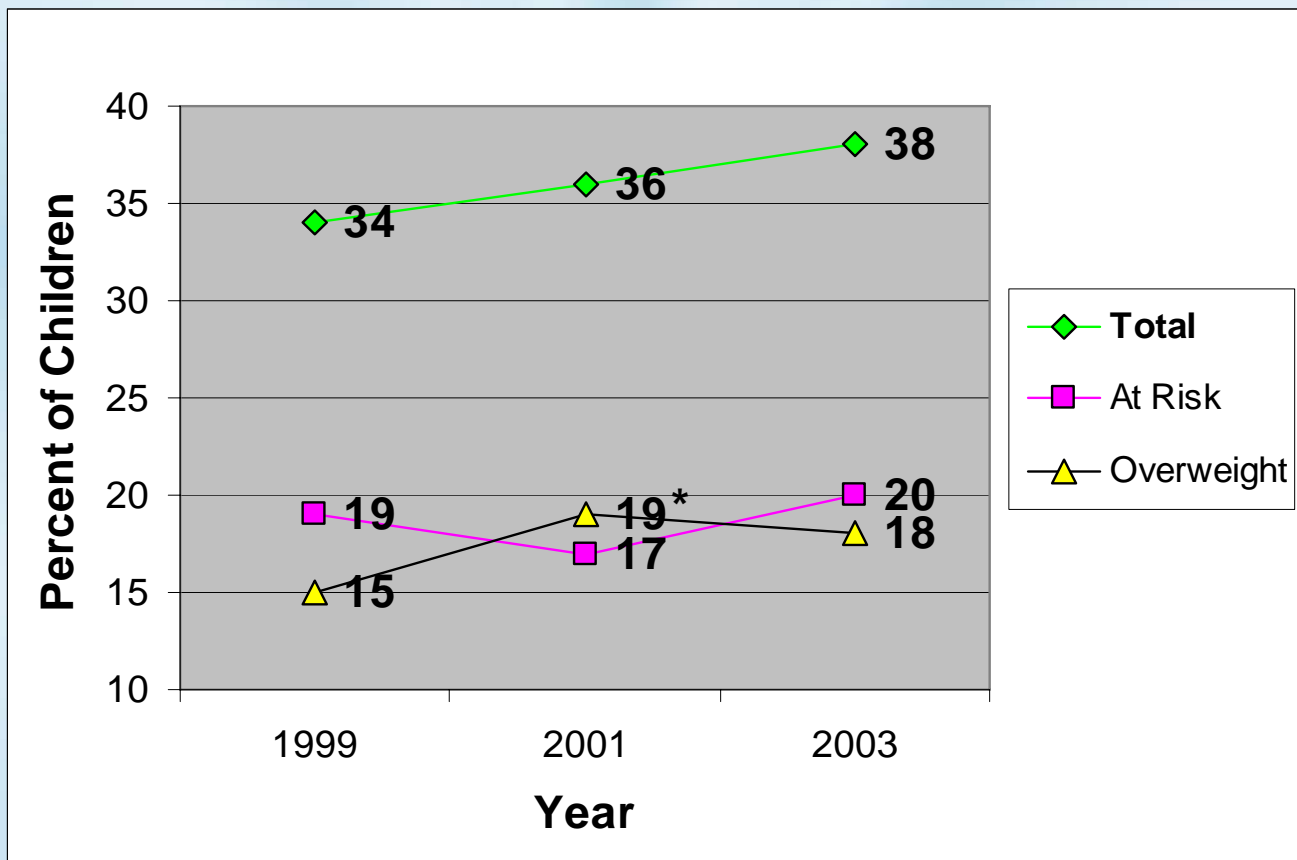
softball basketball dancing



green beans carrots



At Risk and Overweight Rose Among California Children from 1999 to 2003



Notes: * $p < .05$; At Risk is a BMI at the 85th to 95th percentile; Overweight is a BMI at the 95th percentile and above.

It's So Easy.



watermelon

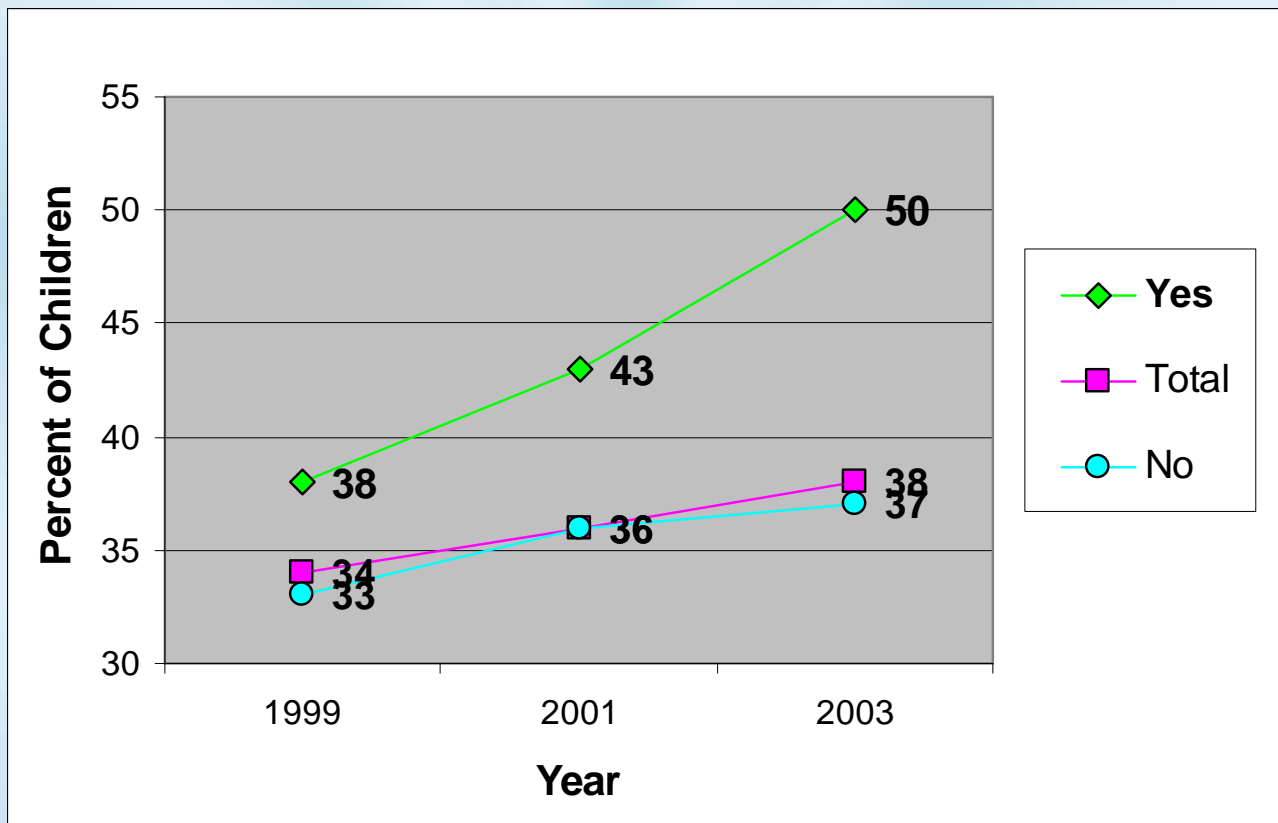
softball basketball dancing



green beans carrots



Gains in At Risk and Overweight Were Highest Among Children From Households Receiving Food Stamps



Notes: At Risk is a BMI at the 85th to 95th percentile; Overweight is a BMI at the 95th percentile and above.

It's So Easy.



watermelon

softball basketball dancing



green beans carrots



Summary of Findings

- Campaign exposure is related to FV knowledge and intake
- Increases in Campaign recall, knowledge, FV intake, & PA
- Best gains among low-income children
- No statistically significant changes in at risk & overweight

It's So Easy.



watermelon

softball basketball dancing

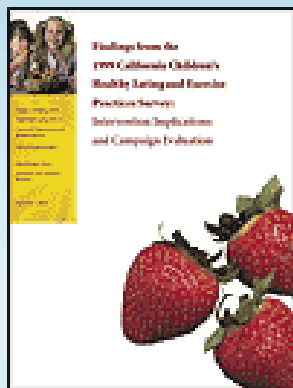


green beans carrots



Resources

- Available at www.ca5aday.com
 - CalCHEEPS Report (September, 2004): Highlights key priorities to help maximize the effectiveness of nutrition education interventions



It's So Easy.



plums green salad



baseball bicycling soccer



peaches peas corn



**California Department of
Health Services/Public
Health Institute,
*Cancer Prevention and
Nutrition Section,*
Research and Evaluation Unit**

Angie Keihner, MS
(916) 449-5389
akeihner@dhs.ca.gov



broccoli bananas carrots



swimming in-line skating



100% fruit juice

It's So Easy.